

POWER SCHOTTKY RECTIFIERS

MAJOR PRODUCTS CHARACTERISTICS

I_{F(av)}	2 * 20 A
V_{RRM}	45 V
V_F	0.63 V

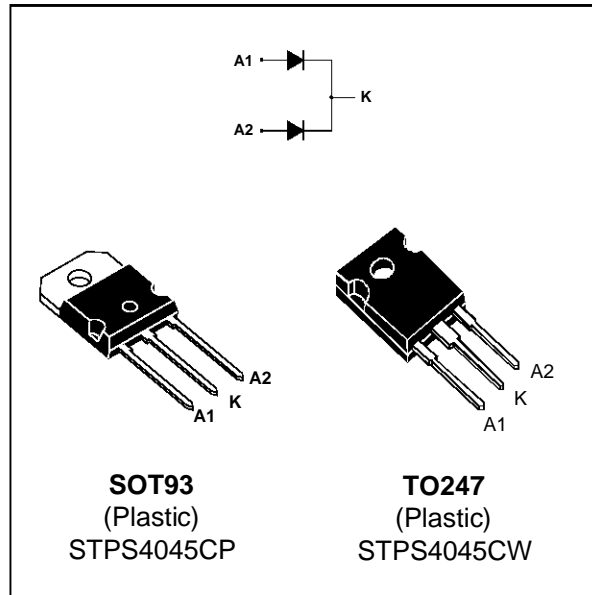
FEATURES AND BENEFITS

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- HIGH AVALANCHE CAPABILITY
- NON ISOLATED VERSION

DESCRIPTION

Dual center tap schottky rectifier suited for switchmode power supply and high frequency DC to DC converters.

Packaged in SOT93 or TO247 this device is intended for use in low voltage, high frequency inverters, free wheeling and polarity protection applications.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V _{RRM}	Repetitive Peak Reverse Voltage		45	V
I _{F(RMS)}	RMS Forward Current	Per diode	35	A
I _{F(AV)}	Average Forward Current	T _c = 125°C δ = 0.5 Per diode Per device	20 40	A
I _{FSM}	Surge Non Repetitive Forward Current	T _p = 10 ms Sinusoidal Per diode	220	A
I _{RRM}	Peak Repetitive Reverse Current	T _p = 2 μs F = 1KHz Per diode	1	A
T _{stg} T _j	Storage and Junction Temperature Range		- 65 to + 150 - 65 to + 150	°C
dV/dt	Critical Rate of Rise of Reverse Voltage		1000	V/μs

THERMAL RESISTANCE

Symbol	Parameter		Value	Unit
R _{TH(j-c)}	Junction-case	Per diode total	1.5 0.8	°C/W
R _{TH(c)}	Coupling		0.1	°C/W

When the diodes 1 and 2 are used simultaneously :
 $\Delta T_J(\text{diode 1}) = P(\text{diode 1}) \times R_{TH}(\text{Per diode}) + P(\text{diode 2}) \times R_{TH(c)}$

STPS4045CP / STPS4045CW

ELECTRICAL CHARACTERISTICS STATIC CHARACTERISTICS PER DIODE

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage current	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			200	μA
		$T_j = 125^\circ\text{C}$				40	mA
V_F^{**}	Forward voltage drop	$T_j = 125^\circ\text{C}$	$I_F = 15\text{ A}$			0.57	V
		$T_j = 125^\circ\text{C}$	$I_F = 20\text{ A}$			0.63	
		$T_j = 125^\circ\text{C}$	$I_F = 30\text{ A}$			0.72	
		$T_j = 125^\circ\text{C}$	$I_F = 40\text{ A}$			0.83	
		$T_j = 25^\circ\text{C}$	$I_F = 30\text{ A}$			0.84	

Pulse test : * $t_p = 5\text{ ms}$, duty cycle $< 2\%$
 ** $t_p = 380\text{ }\mu\text{s}$, duty cycle $< 2\%$

Fig. 1 : Average forward power dissipation versus average forward current. (Per diode)

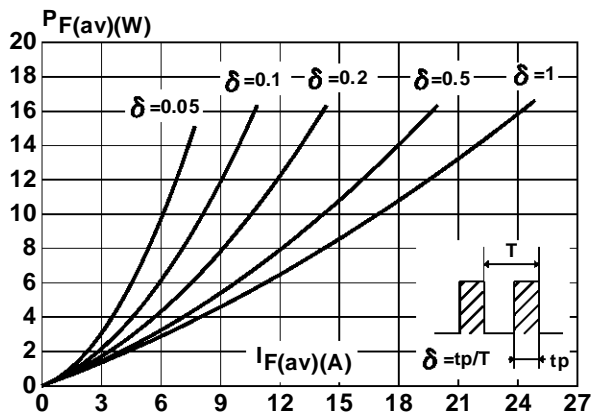


Fig. 3 : Non repetitive surge peak forward current versus overload duration. (Maximum values) (Per diode)

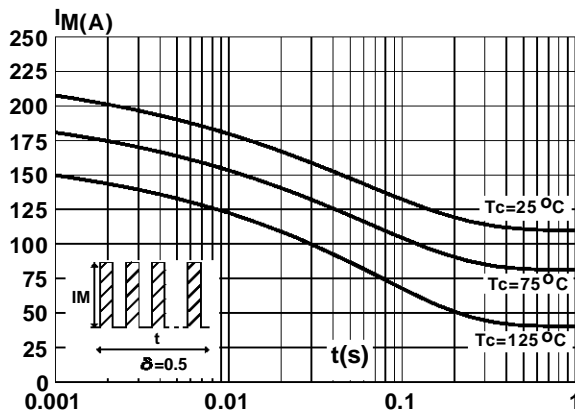


Fig. 2 : Average current versus ambient temperature.

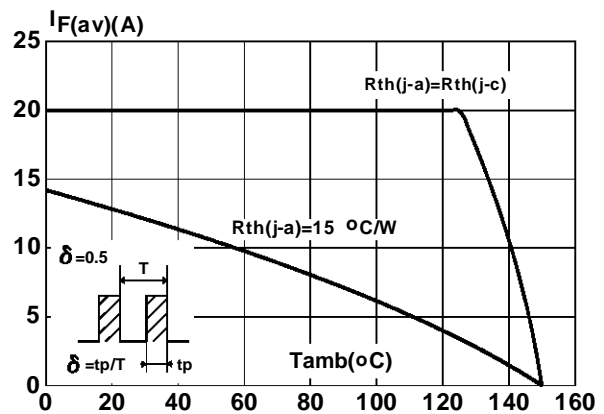


Fig. 4 : Relative variation of thermal transient impedance junction to case versus pulse duration.

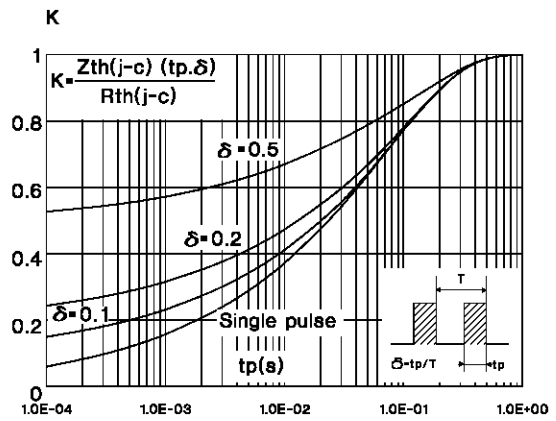


Fig. 5 : Reverse leakage current versus reverse voltage applied. (Typical values) (Per diode)

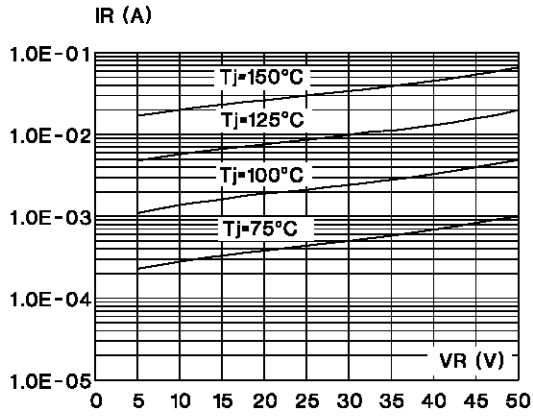


Fig. 6 : Junction capacitance versus reverse voltage applied. (Typical values) (Per diode)

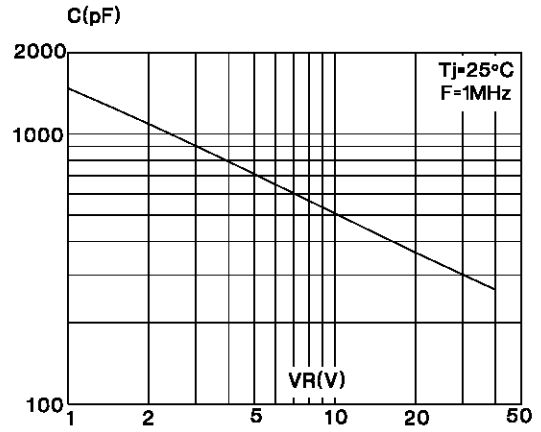
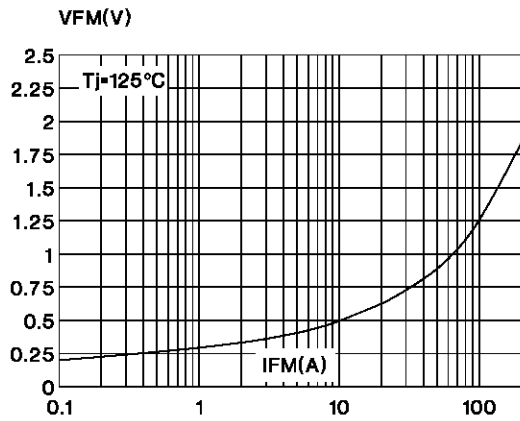
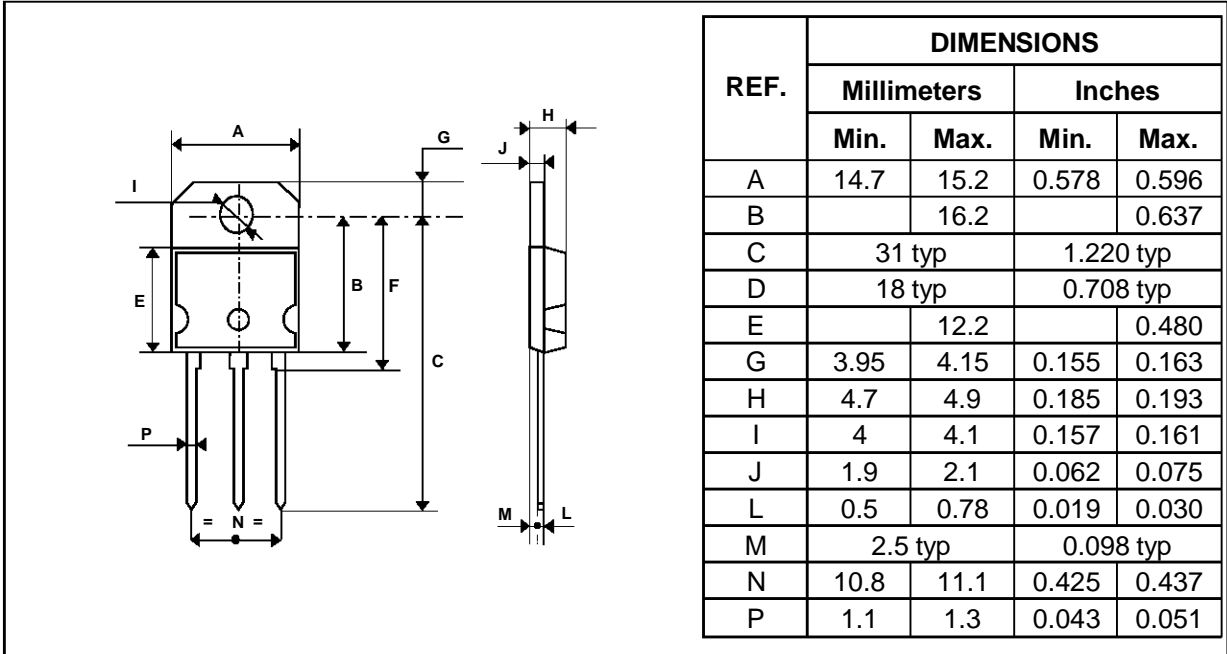


Fig. 7 : Forward voltage drop versus forward current. (Maximum values) (Per diode)



STPS4045CP / STPS4045CW

PACKAGE MECHANICAL DATA
SOT93



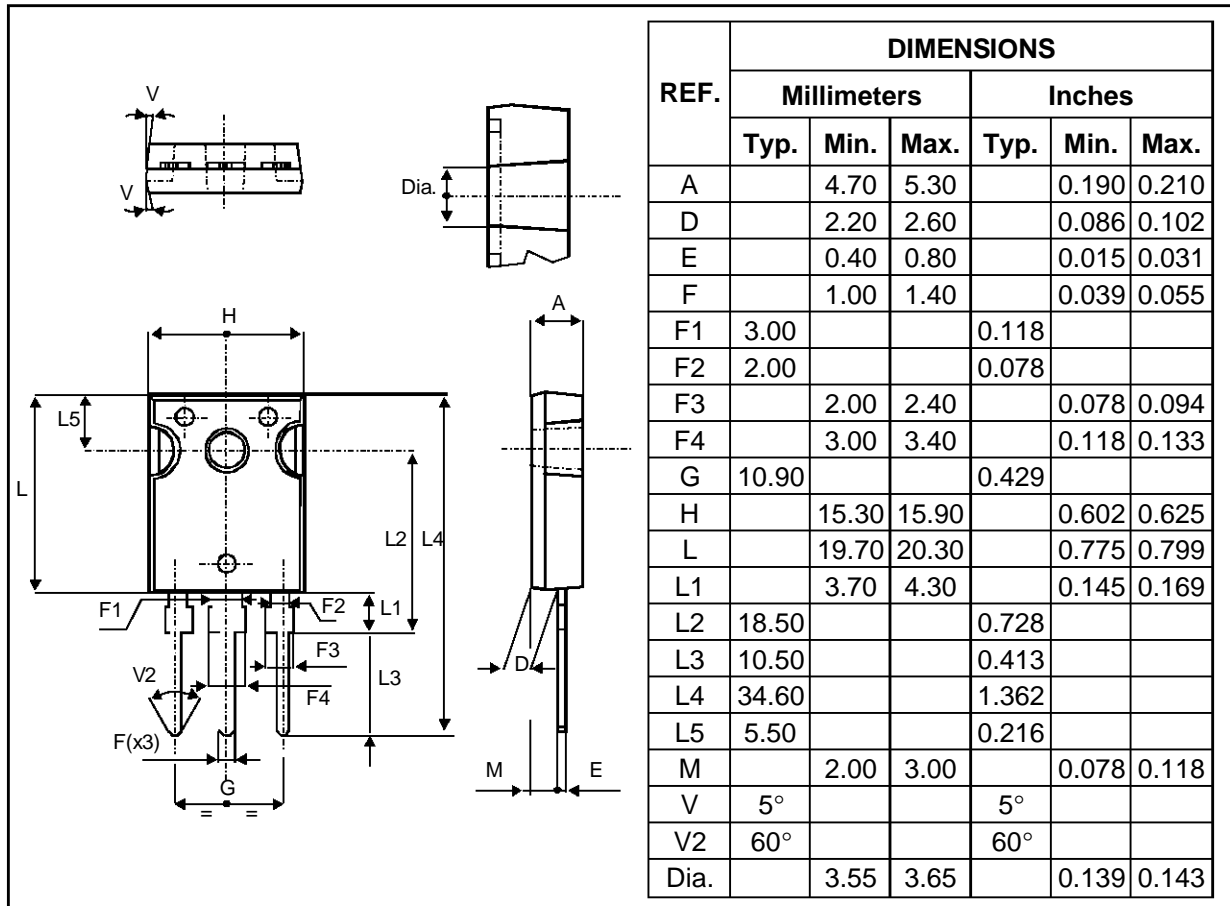
Cooling method : C

Marking : Type number

Weight : 5.3 g

Recommended torque value : 0.8m.N

PACKAGE MECHANICAL DATA
TO247



Cooling method : C
 Marking : Type number
 Weight : 4.4 g
 Recommended torque value : 0.8m.N
 Maximum torque value : 1.0m.N

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